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U. S. Department of Agriculture

PUTTING WEATHER REPORTS TO WORK

A radio talk by Mr. Arthur J. DeMars, meteorologist, Weather Bureau, delivered through Station WRC and 39 other stations associated with the National Broadcasting Company, February 17, 1931.

Have any of you folks ever cut open an orange or grape-fruit and found something inside that resembled a lot of sawdust? If you have, don't think that the grower was stingy with his irrigation water, or that a very dry season was experienced in the orchards. It is frost that causes citrus fruits to look and taste like something that sister's doll is stuffed with. Frost damage to fruit in the United States is relatively greater than to any other crop produced. Most fruit trees respond readily to periods of abnormal weather causing premature development of buds and blooms. It sometimes happens that after a warm period such as this, a cold period will come along. Then, when freezing weather comes, the danger in the orchards is acute. Some damage is caused by frost in scattered localities every winter, but general widespread damage is experienced only at intervals of five to ten years.

It used to be that frozen fruit was shipped along with sound fruit, and as both look alike, the buyer was "taken in." In late years the growers have endeavored to keep inferior fruit from the markets, and now frozen citrus fruit goes either to the by-products plant or to the dump. The value of citrus crop runs into many millions of dollars every year. It takes only one cold night to destroy a great part of this crop. Hence, the Weather Bureau by means of its fruit-frost service, assists the fruit growers to prevent damage. This service was organized in a small way in 1917 to investigate methods of frost protection and to develop means of increasing the accuracy of frost forecasts. The service has been enlarged from time to time and now there are a number of trained specialists assigned to the more important fruit growing districts on the Pacific Coast. Their work consists of making temperature surveys to determine the relative susceptibility of different localities to frost, issuing forecasts of minimum temperatures and giving advice to growers as to favorable locations for orchards. Each evening during the danger period these specialists make a definite forecast of the lowest temperature expected during the night. The orchardists are notified through a specially arranged system of communication when the danger is such as to justify heating the orchards.

Millions of dollars worth of heating equipment has been bought by the growers to protect their orchards from the occasional periods of low temperatures, as orchard heating is the only effective means of protecting the crop. Due to the great expense involved in heating an orchard, it is of the utmost importance that the orchardist should be given the most reliable information obtainable concerning the probable minimum temperature that will occur in his particular orchard, as it may or may not be in danger. Due to the location of some orchards it sometimes happens that one orchard will be in danger and heating will be necessary while another orchard not far distant will be safe, and heating will not be required.

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During the winter season a forecast is made every night by the Weather Bureau giving an estimate as to what the lowest temperature will be the following morning in the coldest locations in the various citrus districts on the Pacific Coast. At the beginning of this service these forecasts were prepared entirely for the benefit of the fruit growers who were protecting their crops, but now the residents of the citrus districts use the forecasts to determine when there is likely to be orchard heating so that they can make preparations to minimize the effects of the smoke.

Acting on the advice of the Fruit-frost specialists, that an unusually severe frost would likely be experienced in a day or so, which would probably require an additional fuel supply, the growers in southern California on Christmas day, 1924, rushed 300 carloads and 175 truckloads of oil in addition to the full capacity of their regular freight supply to meet this emergency. It later proved that vast quantities of fruit would have been lost if this additional fuel had not been provided.

The next talk will be on Thursday and will be about fire-weather warnings, and how they are used to protect our forest lands and camping grounds.